PATENT
Attorney Docket No. YOR920000785

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
Ana Belen Benitez-Jimenez et al.	Examiner: Meltin BELL
Serial No: 10/002,998	Art Unit: 2121
Filed: November 1, 2001	
For: NETWORK FOR DESCRIBING MULTIMEDIA INFORMATION	

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The Appellant submits this brief pursuant to 37 C.F.R. §1.192 in furtherance of the Notice of Appeal timely filed in this case on March 23, 2005, setting a two-month shortened statutory period of brief filing expiring May 23, 2005.

Please charge Deposit Account 50-0510 the $500 fee for filing this Appeal Brief. No other fee is believed due with this Appeal Brief, however, should another fee be required please charge Deposit Account 50-0510.

Real Party In Interest

The real party in interest is International Business Machines Corporation.

Related Appeals And Interferences

None.

PATENT
Attorney Docket No. YOR920000785

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Ana Belen Benitez-Jimenez et al.

Serial No: 10/002,998

Filed: November 1, 2001

For: NETWORK FOR DESCRIBING MULTIMEDIA INFORMATION

Examiner: Meltin BELL

Art Unit: 2121

CERTIFICATE OF SUBMISSION BY FACSIMILE

PTO FAX NUMBER: 703-872-9306
TOTAL NUMBER OF PAGES: 15

Dear Sir:

I hereby certify that the following documents are being transmitted to the U.S. Patent and Trademark Office on the date shown below:

1. APPEAL BRIEF (14 pages); and

2. This CERTIFICATE OF SUBMISSION BY FACSIMILE (1 page).

If you did not receive all the pages, please telephone us at 718-544-1110, or fax us at 718-544-8588.

Respectfully submitted,

Dated: May 23, 2005

Ido Tuchman, Reg. No. 45,924
Law Office of Ido Tuchman
69-60 108th Street, Suite 503
Forest Hills, NY 11375
Telephone (718) 544-1110
Facsimile (718) 544-8588

Status of Claims

Claims 1-26 are pending in this application.

Claims 1 and 3-26 stand rejected under 35 U.S.C. §102 as anticipated by U.S. Patent No. 6,564,263 to Bergman et al. (hereinafter "Bergman").

Claim 2 stands rejected under 35 U.S.C. §103(a) as obvious over Bergman in view of George A. Miller, WordNet: A Lexical Database for English, Communications of the AMC, Vol. 38, No. 11, pages 39-41 (Nov. 1995) (hereinafter "Miller").

Status of Amendments

Claim 27 was canceled after the Final Rejection dated November 29, 2004.

Summary of the Invention

The present invention provides a framework for representing knowledge as a collection of semantic concepts, along with their multimedia signifiers and relationships. Application, page 7, lines 17-19. This framework can be used to facilitate the extraction of knowledge from multimedia material and improve the performance of multimedia searching and filtering applications. Application, page 4, lines 17-19.

Fig. 2 presents a high-level illustration of a media network framework introduced by the present invention. Application, page 10, lines 1-2. In this network, nodes 200 represent semantic concepts. Furthermore, words 205 and multimedia content 207 are associated with nodes. Application, page 1, lines 2-3. The media network represents relationships, which may be semantic/lexical relationships 210 and content/feature relationships 211, as arcs between the nodes. Application, page 1, lines 4-5.

With this framework, powerful conceptual searches can be performed, such as query expansion, iterative refinement, and customized retrieval results. Application, page 7, lines 19-22.

For example, using techniques described in the Application, a user may browse for all multimedia content that is related to the concept of "animals". Application, page 16, lines 1-3. The framework offers functionality similar to that of a dictionary or thesaurus by defining, describing and illustrating concepts, and also by denoting the similarity of concepts at the semantic and perceptual levels. Application, page 4, line 21 - page 5, line 2.

In one embodiment of the invention, a search engine may be used to navigate relationship arcs of the concepts associated with matching words and multimedia content to find other concepts (nodes) that relate to an initial node. Application, page 14, lines 19-22. Here, a query is accepted and matched to words and multimedia content related to the concepts encoded in the media network knowledge representation. Application, page 14, lines 5-10. By doing so, the query input can be used to retrieve concepts, content, terms, or feature descriptors related to the input. Application, page 8, lines 3-5.

Issues

1. Whether claims 1 and 3-26 are unpatentable under 35 U.S.C. §102 in view of Bergman.

2. Whether claim 2 is unpatentable under 35 U.S.C. §103(a) in view of Bergman and Miller.

Grouping of Claims

All claims are grouped together for the purpose of this appeal.

Argument

I. Bergman does not teach all the limitations of claims 1 and 3-26

Claims 1 and 3-27 of the pending Application stand rejected under 35 USC §102 as anticipated by U.S. Patent No. 6,564,263 to

Bergman et al. ("Bergman"). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP 2131.

"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.'" MPEP 2112 quoting *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." MPEP 2112 quoting *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)(emphasis in original).

Claim 1 recites, in part, "forming a network having nodes that represent semantic concepts." In rejecting claim 1, the Final Office Action cites column 10, lines 11-29, column 20, lines 57-65, and Figs. 8-9 of Bergman as allegedly teaching forming a network having nodes that represents semantic concepts. Final Office Action, page 3.

Fig. 9 of Bergman is a graphical representation illustrating an example of feasible modality translations and fidelity summarizations within an "InfoPyramid" framework. Bergman, column 4, lines 34-37. The InfoPyramid describes content in different modalities (e.g., video, audio, text, etc.) and at different fidelities. Bergman, column 7, lines 14-16. Each adjacent node corresponds to a transformation, either between two different modalities or between two different fidelities. Bergman, column 10, lines 11-15. Fig. 8 is a block diagram illustrating a preferred data model or description scheme for an InfoPyramid. Bergman, column 8, lines 12-16.

The Appellant respectfully submits, however, that missing from Bergman is a teaching of semantic concepts included with the InfoPyramid framework. Bergman describes a framework that provides content transformations (modality and/or fidelity), but does not present semantic knowledge. In addition, column 20, lines 57-65 of Bergman (cited by the Examiner) mentions that the multimedia content description system may be used to in a Web search engine, but does not supply a teaching of forming a network having nodes that represent semantic concepts, as recited in claim 1.

In response to the above Arguments, the Final Office Action cites a passage in the present Application explaining that the representation shown in Fig. 2 can be implemented using any computer data structures that allow modelling of graphs or networks. Final Office Action, page 16. This passage has nothing to do with the issue of whether or not Bergman teaches a network having nodes that represent semantic concepts, and no explanation of its relevance is given in the Final Office Action.

The Final Office Action further states, "Bergman Fig. 8-9, column 10, lines 11-29 and column 20, lines 57-65 are cited for explicitly and inherently disclosing the subject matter set forth in the claims by the applicants." Final Office Action, page 16 (emphasis added). In response, the Appellant respectfully submits that the Final Office Action does not specifically identify descriptive matter considered inherent in Bergman, let alone present any extrinsic evidence making clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. The Examiner has not provided a basis in fact or technical reasoning to reasonably support the determination that allegedly inherent characteristic necessarily flows from the teachings of Bergman.

Thus, the Appellant respectfully submits that Bergman does not anticipate claim 1.

Claims 2-5, 25 and 26 are dependent on and additionally limit claim 1. Since claim 1 is allowable over the cited art, claims 2-5, 25 and 26 are also allowable over the cited art for at least the same reasons as claim 1.

Claim 6 recites, in part, "an encoded media network knowledge representation that comprises a network having nodes that represent semantic concepts, one or more words and multimedia associated with the one or more nodes, and wherein relationships between the nodes are represented as arcs between associated words and arcs between associated multimedia contents." In rejecting claim 6, the Final Office Action cites column 22, lines 5-16, column 2, lines 34-37, column 7, lines 17-25, column 23, lines 22-53, column 10, lines 11-29, Figs. 9, 11-14, 17-19 and column 22, lines 26-39. Final Office Action, page 17. The Final Office Action states that Bergman is "cited for explicitly and inherently disclosing the subject matter set forth in claim 6." Final Office Action, page 17 (emphasis added).

As discussed above, Bergman teaches a graphical representation illustrating feasible modality translations and fidelity summarizations within an "InfoPyramid" framework. Bergman, column 4, lines 34-37. The InfoPyramid describes content in different modalities (e.g., video, audio, text, etc.) and at different fidelities. Bergman, column 7, lines 14-16. Each adjacent node corresponds to a transformation, either between two different modalities or between two different fidelities. Bergman, column 10, lines 11-15. Fig. 8 is a block diagram illustrating a preferred data model or description scheme for an InfoPyramid. Bergman, column 8, lines 12-16.

The Appellant respectfully submits, however, that missing from Bergman is a teaching of semantic concepts included with the InfoPyramid framework. Bergman describes a framework that provides content transformations (modality and/or fidelity), but does not present semantic knowledge. Moreover, the Final Office Action does not specifically identify descriptive matter

considered inherent in Bergman, let alone present any extrinsic evidence making clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. The Examiner has not provided a basis in fact or technical reasoning to reasonably support the determination that allegedly inherent characteristic necessarily flows from the teachings of Bergman.

Thus, the Appellant respectfully submits that Bergman does not anticipate claim 6.

Claims 7-9 are dependent on and further limit claim 6. Since claim 6 is allowable over the cited art, claims 7-9 are also allowable over the cited art for at least the same reasons as claim 6.

Claim 10 recites, in part, "an encoded media network knowledge representation that comprises a network having nodes that represent semantic concepts." As discussed above, Bergman does not teach a network having nodes that represent semantic concepts, as recited in claim 10. Therefore, the Appellant respectfully submits that claim 10 is not anticipated by Bergman.

Claim 11 is dependent on and additionally limits claim 10. Since claim 10 is allowable over the cited art, claim 11 is also allowable over the cited art for at least the same reasons as claim 10.

Claim 12 recites, in part, "an encoded media network knowledge representation that comprises a network having nodes that represent semantic concepts." As discussed above, Bergman does not teach a network having nodes that represent semantic concepts, as recited in claim 12. Therefore, the Appellant respectfully submits that claim 12 is not anticipated by Bergman.

Claim 13 is dependent on and additionally limits claim 12. Since claim 12 is allowable over the cited art, claim 13 is also allowable over the cited art for at least the same reasons as claim 12.

Claim 14 recites, in part, "an encoded media network knowledge representation that comprises a network having nodes that represent semantic concepts." As discussed above, Bergman does not teach a network having nodes that represent semantic concepts, as recited in claim 14. Therefore, the Appellant respectfully submits that claim 14 is not anticipated by Bergman.

Claim 15 recites, in part, "an encoded media network knowledge representation that comprises an encoded network having nodes that represent semantic concepts." As discussed above, Bergman does not teach a network having nodes that represent semantic concepts, as recited in claim 15. Therefore, the Appellant respectfully submits that claim 15 is not anticipated by Bergman.

Claim 16 recites, in part, "an encoded media network knowledge representation that includes an encoded network having nodes that represent semantic concepts." As discussed above, Bergman does not teach a network having nodes that represent semantic concepts, as recited in claim 16. Therefore, the Appellant respectfully submits that claim 16 is not anticipated by Bergman.

Claim 17 recites, in part, "means for forming a network having logical nodes that represent semantic concepts." As discussed above, Bergman does not teach a network having nodes that represent semantic concepts, as recited in claim 17. Therefore, the Appellant respectfully submits that claim 17 is not anticipated by Bergman.

Claims 18-23 are dependent on and further limit claim 17. Since claim 17 is allowable over the cited art, claims 18-23 are also allowable over the cited art for at least the same reasons as claim 17.

Claim 24 recites, in part, "first instructions for forming a network having logical nodes that represent semantic concepts." As discussed above, Bergman does not teach a network having nodes

that represent semantic concepts, as recited in claim 24. Therefore, the Appellant respectfully submits that claim 24 is not anticipated by Bergman.

II. Claim 2 is allowable

Claim 2 is dependent on and additionally limits claim 1. Since claim 1 is allowable over the cited art, claim 2 is also allowable over the cited art for at least the same reasons as claim 1 discussed above.

Conclusion

In view of the foregoing, Appellant submits that the rejections of claims 1-26 are improper and respectfully requests that the rejections of claims 1-26 be reversed by the Board.

Respectfully submitted,

Dated: May 23, 2005

Ido Tuchman, Reg. No. 45,924
69-60 108th Street, Ste. 503
Forest Hills, NY 11375
Telephone (718) 544-1110
Facsimile (718) 544-8588

Appendix

1. A method implemented by at least one computer for encoding knowledge, comprising the steps of:

forming a network having nodes that represent semantic concepts;

associating one or more words with one or more of the nodes;

associating multimedia content with one or more of the nodes; and

representing relationships between the nodes as arcs between associated words and arcs between associated multimedia content.

2. The method of Claim 1, further comprising:

creating lexical relations between semantic concepts on the basis of one or more of: word forms and word meaning of associated words.

3. The method of Claim 1, wherein relationships between semantic concepts and between associated content are based at least in part on audio and/or visual feature descriptor values.

4. The method of Claim 3, further comprising:

extracting feature descriptors from multimedia content; and

computing similarity measures between descriptor values.

5. The method of Claim 1, wherein the media network knowledge is represented using the ISO MPEG-7 Description Definition Language.

6. A method implemented by at least one computer for searching an encoded media network knowledge representation that comprises a network having nodes that represent semantic concepts, one or more words and multimedia associated with the one or more nodes, and wherein relationships between the nodes are represented as arcs between associated words and arcs between associated multimedia content, the method comprising the steps of:

accepting a query;

matching the query to the words and multimedia content related to the concepts encoded in the media network knowledge representation;

navigating the relationship arcs of the concepts associated with matching words and multimedia content; and

retrieving related concepts, words, and multimedia content from the matched nodes or related nodes.

7. The method of Claim 6, further comprising:

forming a query comprised of words; and

matching the query words to the words encoded in the media network knowledge representation.

8. The method of Claim 6, further comprising:

forming a query comprised of multimedia content; and

matching the query content to the multimedia content encoded in the media network knowledge representation.

9. The method of Claim 6, further comprising:

forming a query comprised of audio and/or visual feature descriptor values, wherein the feature descriptor values denote proximity to the semantic concepts of the nodes; and

matching the query descriptor values to the descriptor values of the content encoded in the media network knowledge representation.

10. A method for browsing an encoded media network knowledge representation that comprises a network having nodes that represent semantic concepts, one or more words and multimedia associated with the one or more nodes, and wherein relationships between the nodes are represented as arcs between associated words and arcs between associated multimedia content, the method comprising the steps of:

displaying one or more concept nodes and associated words and/or multimedia content; and

providing means for allowing a user to select related concepts for viewing.

11. The method of Claim 10, further comprising:

providing means for allowing the user to select concept nodes and associated words and/or multimedia content for display on the basis of specific types or values of relations to a particular concept node or associated word or multimedia content.

12. A method implemented by at least one computer for summarizing an encoded media network knowledge representation that comprises a network having nodes that represent semantic concepts, one or more words and multimedia associated with the one or more nodes, and wherein relationships between the nodes are represented as arcs between associated words and arcs between associated multimedia content, the method comprising the steps of:

extracting a subset of nodes, relations, and words and/or multimedia content from an encoded media network knowledge representation.

13. The method of Claim 12, further comprising:

consolidating together concept nodes, relations, words, and/or multimedia content.

14. A method implemented by at least one computer for updating an encoded media network knowledge representation that comprises a network having nodes that represent semantic concepts, one or more words and multimedia associated with the one or more nodes, and wherein relationships between the nodes are represented as arcs between associated words and arcs between associated multimedia content, the method comprising the steps of:

adding, deleting or modifying concepts, relations, or associated words, multimedia content, or descriptors in the encoded media network knowledge representation.

15. A method implemented by at least one computer for querying a multimedia information repository associated with an encoded media network knowledge representation that comprises an encoded network having nodes that represent semantic concepts, one or more words and multimedia associated with the one or more nodes, and wherein relationships between the nodes are represented as arcs between associated words and arcs between associated multimedia content, the method comprising the steps of:

searching the encoded media network knowledge representation;

retrieving words, content, and/or descriptors from the media network knowledge representation; and

searching the information repository using the retrieved words, content, and/or descriptors.

16. A method implemented by at least one computer for personalizing multimedia information in a system comprising an encoded media network knowledge representation that includes an encoded network having nodes that represent semantic concepts, one or more words and multimedia associated with the one or more nodes, and wherein relationships between the nodes are represented as arcs between associated words and arcs between associated multimedia content, the method comprising the steps of:

describing the multimedia information using words or descriptors;

describing user preferences using words, multimedia content, and/or descriptors;

matching the user preferences with the descriptions of the multimedia information; and extracting, retrieving, and/or summarizing the matched multimedia items.

17. A system for encoding knowledge, comprising:

means for forming a network having logical nodes that represent semantic concepts;

means for associating one or more words with one or more of the nodes;

means for associating multimedia content with one or more of the nodes; and

means for representing relationships between the nodes as arcs between associated words and arcs between associated multimedia content.

18. The system of claim 17, further comprising means for searching the knowledge encoded in the network.

19. The system of claim 17, further comprising means for browsing the knowledge encoded in the network.

20. The system of claim 17, further comprising means for updating the knowledge encoded in the network.

21. The system of claim 17, further comprising means for summarizing the knowledge encoded in the network.

22. The system of claim 17, further comprising means for querying a multimedia information repository associated with the knowledge encoded in the network.

23. The system of claim 17, further comprising means for personalizing the knowledge encoded in the network for a particular user.

24. A computer program product in a computer readable medium for use for encoding knowledge, the computer program product comprising:

first instructions for forming a network having logical nodes that represent semantic concepts;

second instructions for associating one or more words with one or more of the nodes;

third instructions for associating multimedia content with one or more of the nodes; and

fourth instructions for representing relationships between the nodes as arcs between associated words and arcs between associated multimedia content.

25. The method of claim 1, wherein the relationships between the nodes are based, at least in part, on the features of the multimedia content.

26. The method of claim 1, wherein the relationships between the nodes denote similarity of semantic concepts.